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A Lake and Sea Ice Experiment with Skylab Microwave Radiometry

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From the period 11-21 January 1974 and 26 January-6 February 1974 W.J. Campbell was based at the Cold Regions Research and Engineering Laboratory (CRREL), Hanover, New Hampshire, for the purpose of coordinating and participating in the NASA NP3A remote sensing overflights of the Skylab Lake and Sea Ice Experiment test sites. In addition to the NASA aircraft, several Canadian remote sensing aircraft were engaged in overflights of the test sites, and the Canadian oceanographic ship "Dawson", with Skylab CoInvestigator Dr. W.F. Weeks (CRREL) onboard, was taking surface truth measurements in the Gulf of St. Lawrence test site area, and a team of Canadian scientists with hovercrafts, headed by Skylab CoInvestigator Dr. R.O. Ramseier, Department of the Environment, Canada, were taking surface truth data in Lake Ontario.

There were a total of three remote sensing missions flown by the NP3A aircraft over the Lake and Sea Ice Experiment test sites and underflying as closely in time as possible SL-4 satellite overpasses of the test areas. Two aircraft missions, on 16 January and 21 January, were flown over test site 131, the Gulf of St. Lawrence. One aircraft mission, on 4 February, was flown over test site 239, Lake Ontario. Surface truth data were taken in conjunction with the aircraft overflights.

On 5 and 6 March 1974 a representative for Dr. Campbell attended a Visual Observations Team meeting held at Johnson Space Center in Houston, Texas. At this meeting the first of the SL-4 handheld data was made available to Skylab investigators for evaluation and for use in the coming debriefing sessions with the SL-4 astronauts. These debriefings were also planned.

On 15 March 1974 Dr. W.J. Campbell, Principal Investigator, and Dr. R.O. Ramseier, CoInvestigator, met with the Visual Observations Team and the SL-4 astronauts for a debriefing session. The debriefing was very productive and proved to be of great importance in preparing the Preliminary Skylab Visual Observations Report.

During the last week of March 1974, members of the Lake and Sea Ice Experiment team met with Dr. Campbell to write the Preliminary Skylab Visual Observations Report. Although not all the handheld photography from SL-4 was available at that time, that which was available, together with the astronauts' observations and preliminary surface truth and remote sensing aircraft data, yielded a great deal of information on the morphology and dynamics of the ice in the test areas.